Reviewer’s report

Title: Saudi Views on Consenting Research on Medical Records and Leftover Tissue Samples

Version: 1 Date: 28 June 2010

Reviewer: Ryan Lennon

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General comments

The authors have collected interesting data on Saudi views regarding retrospective medical research. However, the statistical analysis of the data is not satisfactory for publication.

Major Compulsory

1. Methods, page 4, 1st para
   How were respondents chosen? What sampling method was used? How many respondents were patients and how many were patients' companions? Does "companion" refer to only one other person, or could it be a family? Limitations/strengths of the sampling plan may merit discussion.

2. General
   Patients' companions are more likely to share similar views with the patient as compared to another patient. Thus, these are not independent observations as their responses are correlated. The statistical analyses should account for the correlation between patients and their companions.

3. Abstract, 2nd para
   "Preferences were distributed similar to perceptions of norm (P=0.1-0.3), whereas perceptions of current practice were distributed differently for TR (P=0.001), but not for MR (P=0.3)."
   It is not clear in the abstract what these p-values represent. Is is current practice versus preferences or current practice versus perception of norm?

4. Abstract, 3rd para
   "...and 3) stricter requirements were expressed for medical
records-based research."
I do not see results in the Abstract to support this statement.

"We used the phrase "I prefer that" to indicate personal preference..." Responses 4-7 actually use "It is ok..." and not "I prefer that..."
How was this changed to indicate perception of norm?

6. Page 5, 1st para
"We used Chi2 test to examine the null hypothesis of random distribution of choices of statements for each questionnaire." - If the authors are saying they tested whether the statements had a discrete uniform distribution (i.e. probability of 1/7 for each response), that test is not necessary. I think, however, they mean they used the test in general to test associations between response distributions.
In many cases, however, the chi-squared test is not the optimal or even the correct test to use. In particular, when comparing one questionnaire to another, the data represent paired responses on the same scale, so something like the Kappa statistic (measuring agreement) or a test of marginal homogeneity is more reasonable. When testing the distribution of a single questionnaire across subgroups, it would be better to account for the ordinal nature of the response with something like the Armitage trend test or the Kruskal-Wallis test.
However, none of those will account for the correlation between patients' and companions' responses. The authors would need something like a Generalized Estimating Equations analysis for that. Or, they could analyze only the patients responses as a sub-analysis (and companions responses separately, as well, if most patients had only 1 companion).

7. Page 5
"We conducted 7 chi2 tests comparing the 6 questionnaires..."
Why 7 and not 9? Was preference versus current practice not tested? If so, why not?
8. Page 7, last para
"Stricter requirement than current practice was perceived as the norm for both types of research (Figure 2)."
I think this statement is a little too simplistic for the data. It depends on where you collapse the categories. For example, for TR, if you just look at response level 1, current practice is actually perceived to be more strict than the norm. And if you look at responses 6 and 7, it would seem again, that the current practice for TR is more liberal than current practice. It is when you look at responses 2-5 (where admittedly much of the data lies) that the norm is more strict than current practice.

9. Page 9, 2nd para
"(17% and 11%)" I thought these numbers were 23% and 14% (page 6)

Minor Essential

10. Page 4
'combined "with should be/ not"...' Should this read 'combined with "should be/not"'? (i.e. the quotation mark is out of place)

11. Page 9, first para
Add period at the end of sentence "more favorable attitudes towards research"

Discretionary

12. Abstract, 2nd para, line 3
"40% and 49%, respectively..." - Typically, it is not recommended to begin a sentence with a numeral. Either write out "40" as "Forty" or re-word the sentence. This also occurs at:
a) Methods, page 4, first line
b) Results, page 6, 2nd para, line 4
c) Discussion, page 9, 2nd para, line 7

13. Results, page 6, last para
"(P=0.1-0.3)" - consider specifying the p-values for each test
14. Discussion, page 10
"most participants (>77%) would consent if they were asked" - I did not see this in the Results section. Was this an additional questionnaire?

15. Figure 2
Figure 2 shows the marginal distributions of responses, but it does not shed any light on the paired distribution, which is more informative. It would be better to either report the data as a 2 by 2 table, or alternatively, to perhaps use a bubble plot with circles proportional in size to the frequency of each paired response. The authors may also find correspondence analyses and/or mosaic plots to be helpful for visualizing their data.

16. Figures 1-3
It would be better to write out the meanings of 1-7, rather than use those codes as the actual labels on the graphs.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests.